

We claim:

1. In a bundle including a plurality of guide tubes or cable elements loosely arranged for installation into the passage space of a protective duct, in which bundle installation is assisted at least in part by introducing a fluid under pressure into the passage space and flowing pressurized fluid in contact with the bundle during installation, the improvement comprising an elongated filling body loosely associated with the guide tubes or cable elements, the filling body including projecting portions separating the guide tubes or cable elements and opposing crossing over of the guide tubes or cable elements from one side of the filling body to the other as the bundle is installed.
2. The installation bundle according to claim 1, the number of guide tubes or cable elements and cross sectional areas of the guide tubes or cable elements and filling body being selected whereby crossing over of the guide tubes or cable elements within the duct is made impossible.
3. The installation bundle according to claim 1, wherein the number of guide tubes or cable elements and the cross sectional areas of the guide tubes or cable elements are selected to provide a partial filling of the duct in the range of from about 30% to about 70%.

4. The installation bundle according to claim 1, wherein the number of guide tubes or cable elements and the cross-sectional areas of the guide tubes or cable elements are selected to provide partial duct filling of about 50%.

5. The installation bundle according to claim 1, wherein the number of guide tubes or cable elements and the cross-sectional areas of the guide tubes or cable elements are selected to provide a partial duct filling of less than 50%, but not less than about 30%.

6. The installation bundle according to claim 1, wherein the number of guide tubes or cable elements and the cross-sectional areas of the guide tubes or cable elements are selected to provide a partial duct filling of more than 50%, but not more than about 70%.

7. The installation bundle according to claim 1, wherein the guide tubes or cable elements have substantially the same diameter.

8. The installation bundle according to claim 1, characterized in that the guide tubes or cable elements have substantially the same diameter, and the filling body has a larger diameter.

9. The installation bundle according to claim 1, wherein the guide tubes or cable elements each have a substantially cylindrical sidewall.

10. The installation bundle according to claim 1, wherein the guide tubes or cable elements each have a substantially cylindrical sidewall, and the filling body has a non-cylindrical sidewall.

11. The installation bundle according to claim 1, wherein two or more longitudinal ribs project radially from the filling body.

12. The installation bundle according to claim 1, wherein two or more longitudinal ribs project radially from the filling body, and the ribs extend substantially in parallel with the longitudinal axis of the filling body.

13. The installation bundle according to claim 1, wherein two or more longitudinal ribs project radially from the filling body, and the ribs extend substantially in a helical pattern about the filling body.

14. The installation bundle according to claim 1, wherein the filling body comprises an elongated, thin sidewall of compliant material that can be

pressurized with compressed air during installation, and that can easily implode or deform in response to a crushing force after taking away the compressed air.

15. The installation bundle according to claim 1, wherein the filling body comprises a foamed plastic material.

16. The installation bundle according to claim 1, wherein the filling body comprises an elongated extrusion of plastic material having an internal passage that can be pressurized to resist collapse and maintain bundle diameter during installation, and that can be depressurized to allow collapsing of the filling body and reduction of bundle diameter in response to compression forces applied after installation.

17. The installation bundle according to claim 1, wherein the filling body comprises an elongated tubular sidewall of a thin material that can be pressurized with compressed air, and including cross-wound roving material reinforcing the thin tubular sidewall.

18. The installation bundle according to claim 1, wherein the filling body comprises an elongated extrusion of deformable material.

19. The installation bundle according to claim 1, wherein the filling body comprises an elongated tubular sidewall of substantially cylindrical cross section and having a diameter that is greater than the diameter of any of the guide tubes or cable elements.

20. The installation bundle according to claim 1, wherein the filling body comprises an elongated tubular sidewall of substantially cylindrical cross section, and including two or more longitudinal ribs each in the form of a radially projecting cusp integrally formed with the tubular sidewall, with a longitudinally extending pocket being formed between the ribs.

21. The installation bundle according to claim 1, wherein the filling body comprises an elongated tubular sidewall, and including two or more ribs integrally formed with the tubular sidewall and projecting radially therefrom, the ribs being angularly spaced from each other with a longitudinally extending pocket being formed between adjacent ribs.

22. The installation bundle according to claim 1, wherein the ribs have a radial projection length that is greater than the radius of the guide tube or cable elements.

23. The installation bundle according to claim 1, wherein the filling body comprises a curved half-moon portion that is terminated on opposite sides by longitudinally extending flange portions, the half-moon portion including a concave sidewall portion defining a longitudinal pocket for receiving one or more guide tube or cable elements.

24. The installation bundle according to claim 1, wherein the filling body is characterized by a gull-wing profile in cross section.

25. In a bundle including a plurality of guide tubes or cable elements loosely arranged for installation into the passage space of a protective duct, in which bundle installation is assisted at least in part by introducing a fluid under pressure into the passage space and flowing pressurized fluid in contact with the bundle during installation, the improvement comprising an elongated partition member disposed in side-by-side loose bundle relation with the guide tubes or cable elements, the partition member including radially projecting, circumferentially spaced portions partitioning the duct passage space into a plurality of channels in which the guide tubes or cable elements are disposed as the bundle is installed.

26. The installation bundle according to claim 25, wherein the elongated partition member is dimensionally formed for constraining the guide tubes or cable elements to move longitudinally along with the filling body during installation.

27. The installation bundle according to claim 25, wherein the guide tubes or cable elements are positioned along the outside of the elongated partition member, thereby providing access to the guide tubes or cable elements during post-installation branching.